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MAR 24 1969

WATER SUPPLY OUTLOOK FOR ARIZONA

CURRENT SERIAL RECORDS

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE--SOIL CONSERVATION SERVICE,
SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF
JAN. 15, 1969

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80521
Idaho	P. O. Box 38, Boise, Idaho 83707
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

D. A. WILLIAMS
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D. C.

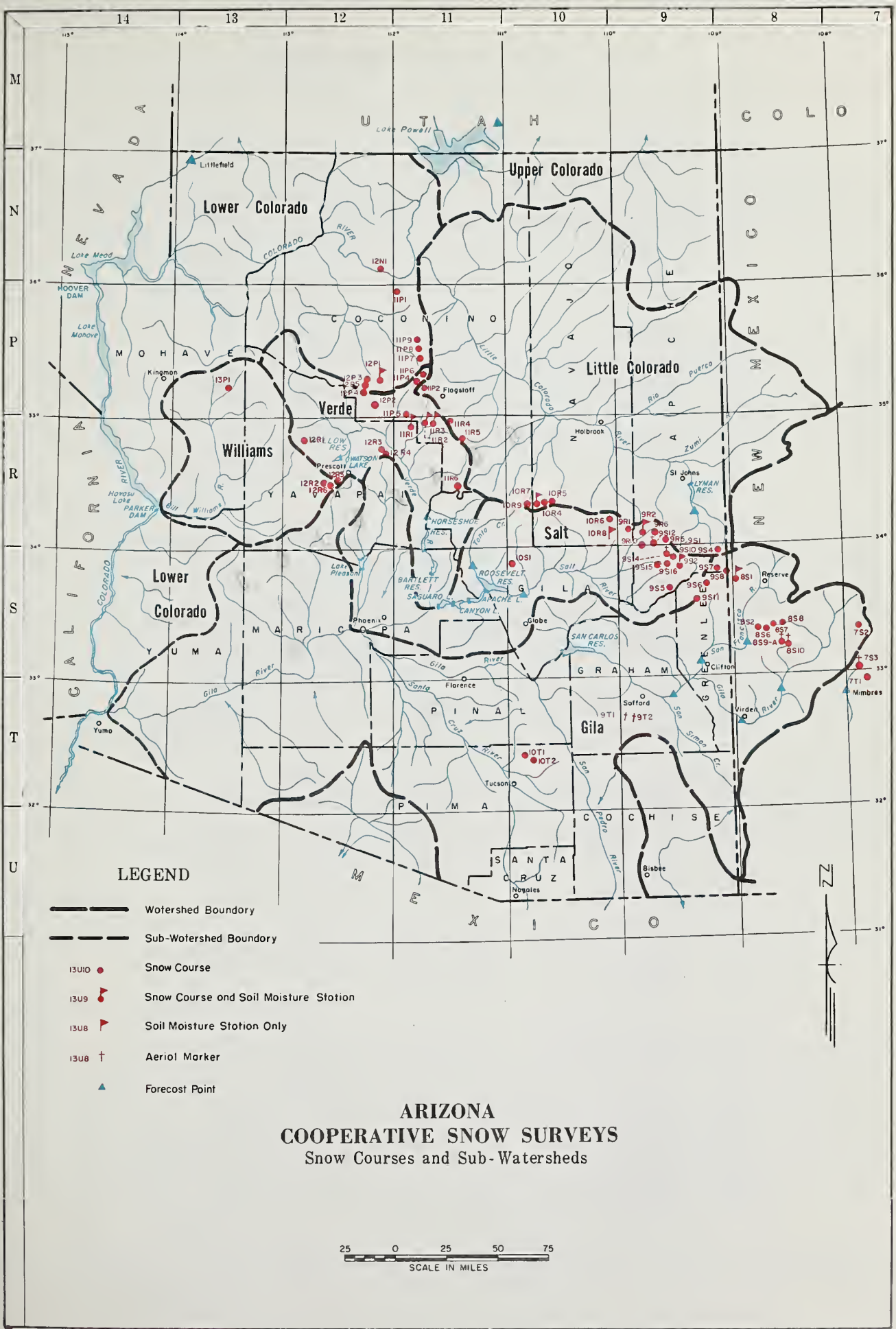
M. D. BURDICK
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
PHOENIX, ARIZONA

RICHARD K. FREVERT
DIRECTOR
ARIZONA AGRICULTURAL
EXPERIMENT STATION

VICTOR I. CORBELL
PRESIDENT
SALT RIVER VALLEY WATER
USERS ASSOCIATION

RICHARD W. ENZ, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025



INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

Number	Name	Sec	Twp	Rge	Elevation	River Basin
11R6	Baker Butte (p)	4	12N	9E	7300	Verde
9S1-A	Baldy (p)	28	7N	27E	9125	Little Colorado
9S15	Baldy #2	12	6N	26E	10000	Little Colorado
9S16	Baldy #3	13	6N	26E	11000	Little Colorado
10T1	Bear Wallow	6	12S	16E	8100	Gila
12P5	Bill Williams Intermediate	17	21N	2E	8550	Lower Colorado
12P4	Bill Williams Summit	17	21N	2E	8950	Lower Colorado
9S6	Beaver Head	13	4N	30E	8000	San Francisco
9S10-M	Black River Divide	10	6N	27E	9400	Salt
12N1	Bright Angel	34	33N	3E	8400	Lower Colorado
12R1	Camp Wood	3	16N	6W	5700	Verde
10R7-M	Canyon Creek #2	18	11N	15E	7500	Little Colorado
10R9	Canyon Point (p)	28	11N	14E	7600	Salt
11R2-M	Casner Park	19	18N	8E	6930	Verde
12P1-M	Chalender	27	22N	3E	7100	Verde
12R6	Copper Basin Divide (p)	23	13N	3W	6720	Verde
10R8-M	Corduoy Creek	4	8N	21E	6000	Salt
9S7	Coronado Trail	26	5N	30E	8000	San Francisco
9T2-A	Crazy Horse	34	8S	24E	10200	Gila
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres
10R6	Forest Dale	2	9N	21E	6430	Salt
11P2	Fort Valley (p)	22	22N	6E	7350	Little Colorado
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado
8S1-M	Frisco Divide	31	6S	20W**	8000	San Francisco
12R4	Gaddes Canyon	11	15N	2E	7600	Verde
10R5	Gentry	36	11N	15E	7650	Salt
11P1	Grand Canyon	21	30N	4E	7500	Lower Colorado
9S11	Hannagan Meadows (p)	19	3N	29E	9090	Salt
11R5	Happy Jack	30	17N	9E	7630	Verde
9R10	Hawley Lake	13	7N	24E	8300	Salt
10R4	Heber (p)	28	11N	15E	7600	Little Colorado
9T1-A	High Peak	34	8S	24E	10500	Gila
8S9-A	Hummingbird	19	11S	17W**	10550	San Francisco
8S6	Ice King	6	11S	18W**	8020	San Francisco
7S2	Inman	6	11S	10W**	7800	Gila
11P9	Inner Basin #1 (p)	28	23N	7E	10000	Little Colorado
11P8	Inner Basin #2 (p)	28	23N	7E	9750	Little Colorado
11P7	Inner Basin #3	3	23N	7E	10250	Little Colorado
12R2	Iron Springs	22	14N	3W	6200	Bill Williams
9S2-A	Maverick Fork (p)	13	6N	27E	9150	Salt
7S3-A	McKnight Cabin	10	15S	10W**	9300	Mimbres
9R2-M	McNary	23	8N	23E	7200	Salt
9R1	Milk Ranch	33	8N	23E	7000	Salt
12R3	Mingus Mountain	3	15N	2E	7100	Verde
8S2	Mogollon	2	11S	19W**	7000	San Francisco
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado
11R3-M-A	Mormon Mountain (p)	14	18N	8E	7500	Verde
9S12-A	Mt. Ord	4	6N	26E	11000	Salt
11R1-M	Munds Park	15	18N	7E	6500	Verde
11P5-M	Newman Park	25	19N	6E	6750	Verde
9S4	Nutriso	23	6N	30E	8500	San Francisco
9S5	Pacheta	27	4-1/2N	27E	7800	Salt
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco
10T2	Rose Canyon	15	12S	16E	7300	Gila
8S8	Silver Creek Divide	4	11S	18W**	9000	San Francisco
9S14-A	Smith Cienega	10	6N	26E	9850	Salt
11P4	Snow Bowl #1 (p)	36	23N	6E	10260	Verde
11P6	Snow Bowl #2	31	23N	7E	11000	Verde
9S8	State Line	6	6S	21W**	8000	San Francisco
12R5	White Spar	19	13N	2W	6000	Verde
12P2	White Horse Lake Jet	2	20N	2E	7150	Verde
8S10-A	Whitewater	19	11S	17W**	10750	Gila
12P3	Williams Ski Run	9	21N	2E	7720	Lower Colorado
13P1	Willow Ranch	16	21N	11W	5000	Bill Williams
9R6	Wilson Lake (p)	4	7N	26E	9000	Salt
10S1	Workman Creek	33	6N	14E	6900	Salt

M SOIL MOISTURE STA.

(p) STORAGE GAGE

A

AERIAL SNOW DEPTH MARKER

* SOIL MOISTURE STA. ONLY

** NM PRINCIPAL MERIDIAN

ARIZONA WATER SUPPLY OUTLOOK

JANUARY 15, 1969

* * * * *
* The Water Supply Outlook for 1969 is generally good. Central Arizona
* Reservoirs contain much above average supplies of water, but stream-
* flow is expected to be slightly below average on most streams.
*
* * * * *

SNOW COVER

The present snow pack is 30 to 50% above the 1953-67 average, but only about 1/3 of what it was at this time last year. Warm temperatures so far in January have reduced the snow pack considerably since January 1. The recent warm storm resulted in very slight increases at the higher elevations, but reduced the snow cover at the lower elevations. Precipitation below 7500' was generally in the form of rain.

PRECIPITATION

So far, this winter's precipitation has been quite spotty, with some areas receiving above normal amounts and others close by receiving below normal. The eastern part of the Verde Watershed, the "Rim," the Gila Watershed and parts of the White Mountains received heavy precipitation in December. During November and January, however, precipitation has generally been below average. The recent storm on the 14th and 15th resulted in only 1/4 to 1/2 an inch of precipitation at most watershed stations, while many desert areas received over an inch.

RESERVOIR STORAGE

Stored water in Central Arizona Reservoirs is very good, but not as high as it has been the last few years. The Salt River Project Reservoirs presently contain 71% of capacity, which is 46% above average for this date. Storage in San Carlos Reservoir is 5 times average, with 39% of capacity.

SOIL MOISTURE

Although surface soil moisture is high due to melting snow and recent rains, the total soil profile contains below normal soil moisture.

STREAMFLOW AND WATER SUPPLY

December streamflow was below average on all Arizona streams mainly because of cold temperatures. Even with the warm temperatures the last three weeks and the recent rain, runoff has not yet increased substantially. The dry soil seems to be absorbing most of the snow melt. Under the present conditions, the amount of spring runoff produced will depend largely on the precipitation patterns of the next two months. If normal precipitation occurs during this period, runoff is expected to be slightly below average. Filling of Salt River Project Reservoirs is not anticipated this year.

Water supplies will be adequate in Central Arizona this year for all projects served by surface water. Slight shortages may occur in areas served by direct diversions.

STATUS OF ARIZONA RESERVOIR STORAGE - ABOUT JANUARY 15, 1969

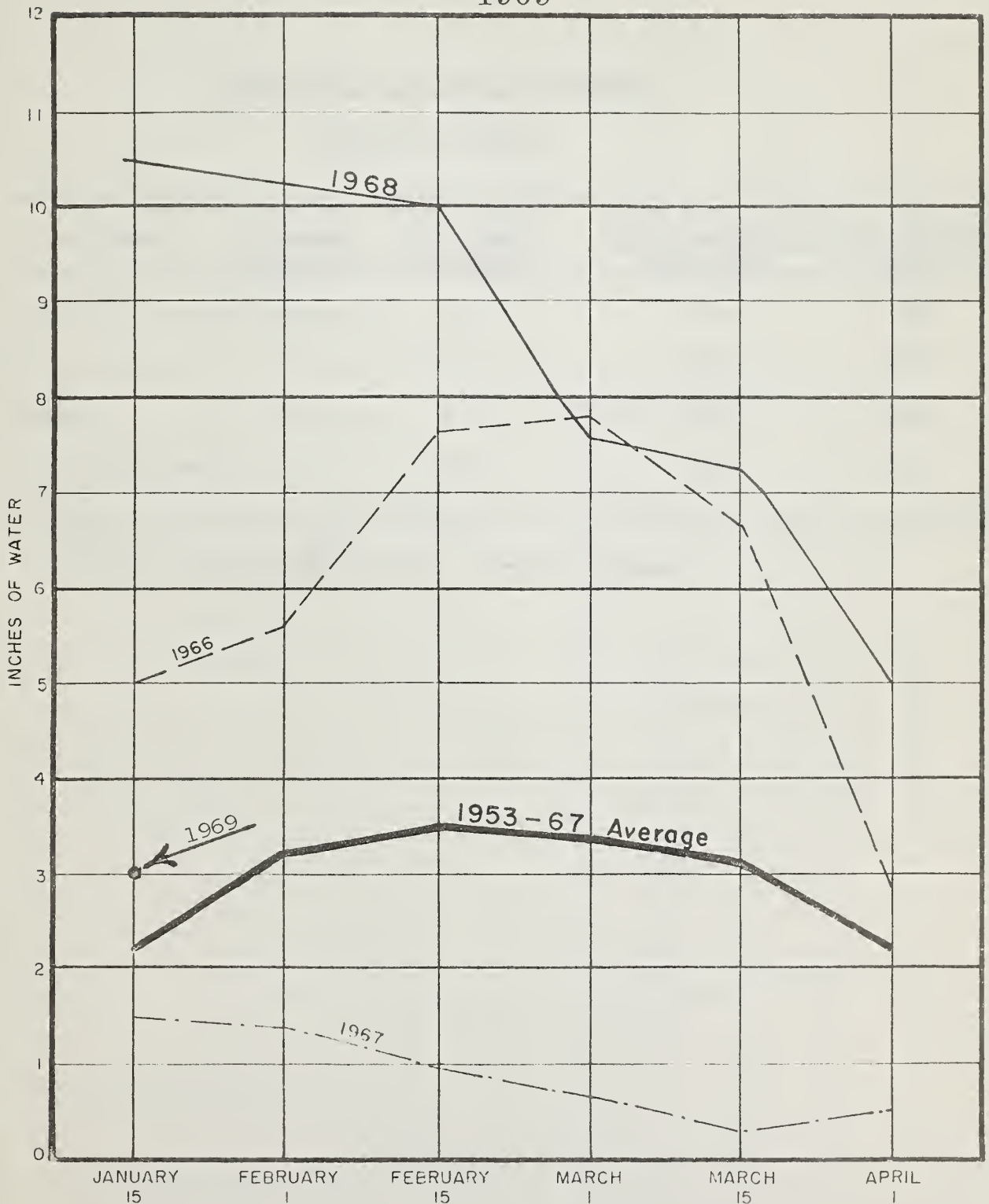
SUB- WATERSHED and/or STREAM	RESERVOIR	USABLE	USABLE STORAGE - 1000s ACRE FEET			
		CAPACITY 1000s ACRE FEET	1969	1968	1967	15-Year Average 1953-67
GILA RIVER DRAINAGE						
Agua Fria	Lake Pleasant	157.6	104.8	144.7	126.7	40.1
Granite	Watson Lake	4.7	1.3	1.4	3.0	----
Granite	Willow Creek	6.1	1.7	1.6	3.9	----
Gila	San Carlos	1,206.0	467.1	325.0	324.0	89.4
Verde (2)	Bartlett & Horseshoe	322.3	86.1	89.3	204.5	93.3
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755.0	1,387.2	1,421.4	1,464.4	909.0
COLORADO RIVER DRAINAGE						
Colorado	Lake Havasu	619.4	544.5	544.7	545.9	534.8
Colorado	Lake Mohave	1,810.0	1,534.0	1,668.0	1,582.0	1,652.3
Colorado	Lake Mead	27,207.0	15,337.0	14,455.0	15,555.0	16,754.3
Colorado	Lake Powell	25,002.0	9,113.0	8,219.0	7,734.0	-----
Little Colorado	Lyman	30.6	19.0	17.8	17.5	8.7
Little Colorado	Show Low Lake	5.1	.7	0.5	0.6	1.3 *

* Average is for less than 15 years of record in the 1953-67 period.

RELATIVE SNOW WATER ACCUMULATION

ARIZONA

1969



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

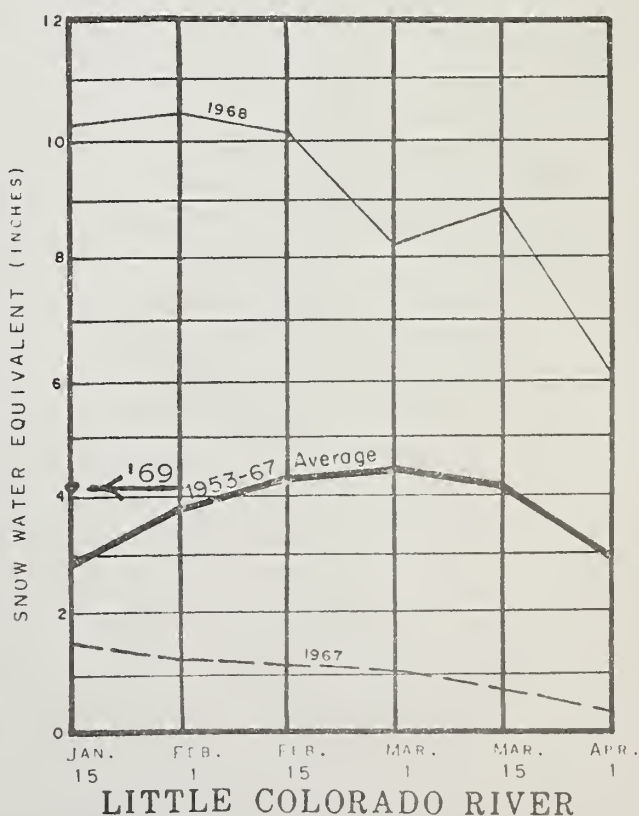
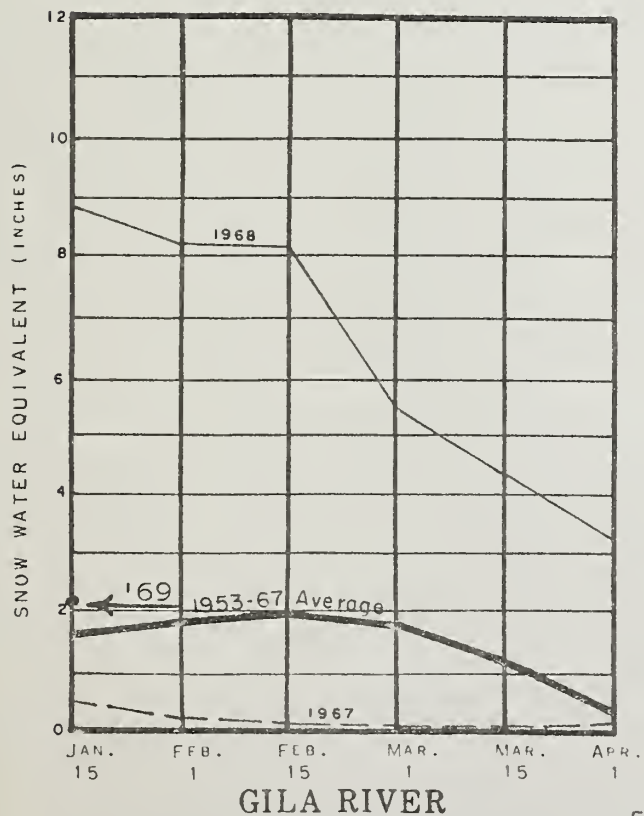
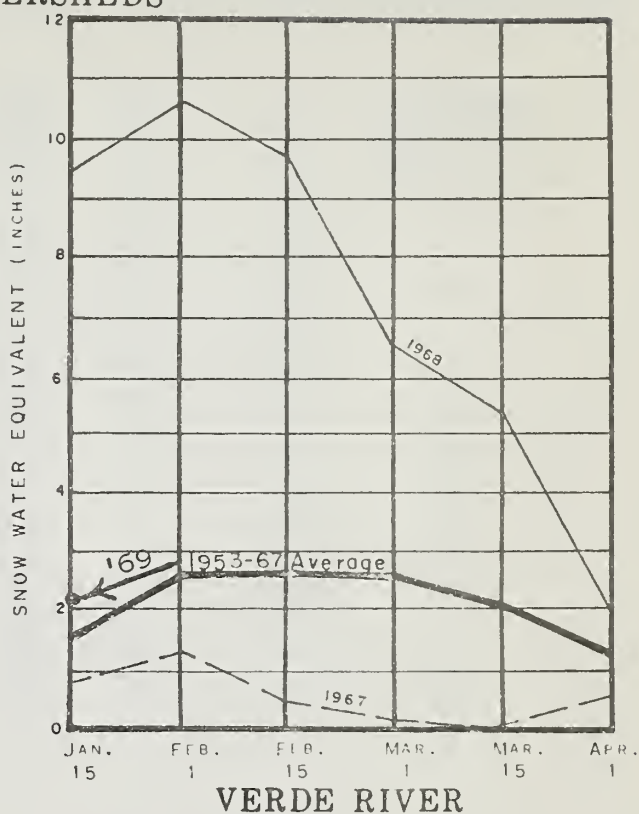
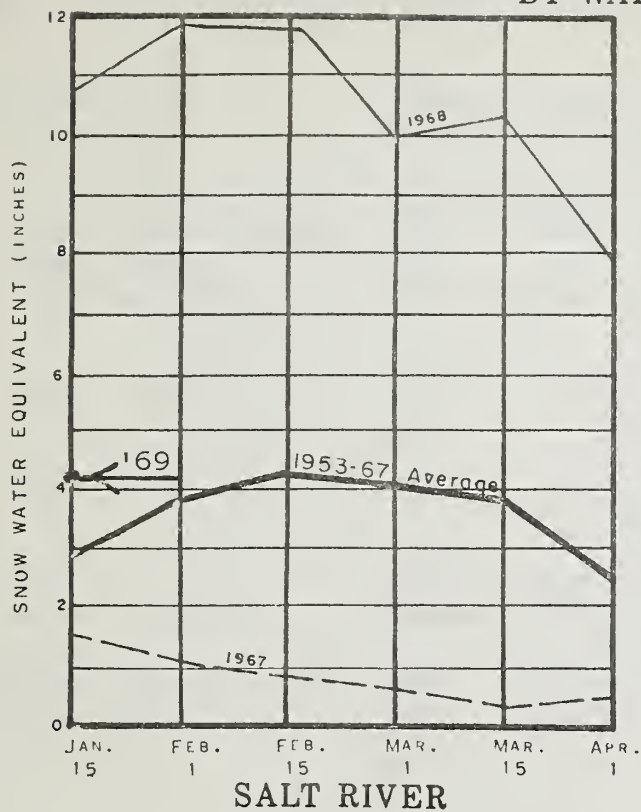
SNOW COVER ON ARIZONA WATERSHEDS

JANUARY 15, 1969

Watershed	No. of Courses Average	Water Content of Snow (Inches)	This Year's Water Content of Snow Expressed as Percent of:	
			Last Year	Average *
Gila	5	2.1	21%	119%
Salt	9	4.2	35%	148%
Verde	7	2.1	23%	141%
Little Colorado	4	4.1	40%	141%

* Actual or Estimated 1953-67, 15-year Average.

1969 ARIZONA SNOW COVER BY WATERSHEDS



SNOW EARLY WINTER SURVEYS, 1968-69

DRAINAGE BASIN and SNOW COURSE			CURRENT INFORMATION			PAST RECORD	
NAME	NO.	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
						LAST YEAR	AVERAGE "
Agassiz (A)	11P10	11200	1/3	32	7.7	NO RECORD FOR THIS PERIOD.	
Baker Butte	11R6	7300	12/27	23	4.8		
" "			1/2	19	4.8		
Canyon Point	10R9	7600	1/2	20	4.8		
Copper Basin Divide	12R6	6720	1/3	9	2.0		
Happy Jack	11R5	7630	1/2	15	3.7		
Inner Basin #1	11P9	10100	11/1	T	0.0		
" "			12/4	14	3.1		
" "			1/3	23	6.0		
Inner Basin #2	11P8	9750	11/1	0	0.0		
" "			12/4	11	2.7		
" "			1/3	19	4.9		
Inner Basin #3	11P7	10250	11/1	T	0.0		
" "			12/4	7	1.6		
" "			1/3	7	1.9		
McNary	9R2-M	7200	12/31	20	4.6		
Mormon Mountain	11R3-M	7500	12/27	21	4.1		
			1/2	17	4.3		
Silver Creek Divide	8S8	9000	1/1	36	8.5		
Wilson Lake	9R6	9000	12/31	33	7.4		

SNOW ABOUT JANUARY 15, 1969

DRAINAGE BASIN and SNOW COURSE			CURRENT INFORMATION			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH (inches)	WATER CONTENT (inches)	WATER CONTENT (inches)	
NAME	NO.	ELEVATION				LAST YEAR	AVERAGE "

GILA RIVER

Bear Wallow	10T1	8100	REPORT DELAYED			14.7	3.1
Beaver Head	9S6	8000	1/14	11	2.2	12.5	2.7
Coronado Trail	9S7	8000	1/14	9	3.1	11.6	2.0
Crazy Horse (A)	9T2-A	10200	REPORT DELAYED			15.6	---
Emory Pass #1 *	7T1	7800	1/13	0	0.0	3.7	---
Emory Pass #2 *	7T2	7800	1/13	4	1.5	7.2	---
Frisco Divide	8S1-M	8000	1/15	7	2.0	9.7	1.8
Hannagan Meadows *	9S11	9090	1/14	27	7.2	16.0	---
High Peak (A)	9T1-A	10500	REPORT DELAYED			17.6	---
Hummingbird (A)	8S9-A	10550	REPORT DELAYED			21.9	---
Ice King	8S6	8020	1/15	17	4.5	11.2	3.2 **
Inman (discontinued)							
McKnight Cabin *	7S3-A	9300	REPORT DELAYED			---	---
Mogollon	8S2	7000	1/15	6	1.8	7.3	1.2
Nutriosio	9S4	8500	1/14	6	2.8	8.6	1.4
Redstone Trail	8S7	8600	1/15	19	5.3	12.9	5.1 **
Rose Canyon	10T2	7300	REPORT DELAYED			11.6	2.0
Silver Creek Divide	8S8	9000	1/15	28	8.1	16.1	7.3 **
State Line	9S8	8000	1/15	10	2.4	10.3	1.9
Whitewater (A)	8S10-A	10750	REPORT DELAYED			22.6	---

SALT RIVER

Baldy *	9S1	9125	1/14	19	4.8	11.3	4.2
Beaver Head	9S6	8000	1/14	11	2.2	12.5	2.2
Canyon Creek	10R7-M	7500	1/13	9	2.9	11.8	1.7 **
Canyon Point	10R9	7600	1/13	12	3.7	12.5	---
Coronado Trail	9S7	8000	1/14	9	3.1	11.6	2.0
Forest Dale	10R6	6430	1/14	5	1.6	9.3	0.7
Ft. Apache	9R5	9160	1/14	19	5.1	11.6	4.7
Hannagan Meadows	9S11	9090	1/14	27	7.2	---	---
Hawley Lake	9R10	8300	1/14	21	6.4	11.1	---
Heber	10R4	7600	1/13	11	3.3	12.3	1.8
Maverick Fork	9S2	9050	1/10	25	6.2	12.8	5.3
McNary	9R2-M	7200	1/14	11	3.7	10.0	1.3
Milk Ranch	9R1	7000	1/13	7	2.2	8.0	0.9
Mt. Ord (A)	9S12-A	11000	NO SURVEY			21.4	---
Nutriosio *	9S4	8500	1/14	6	2.8	8.6	1.4
Smith Cienega (A)	9S14-A	9850	NO SURVEY			16.8	---
Wilson Lake	9R6	9000	1/14	27	7.8	12.2	---
Workman Creek	10S1	6900	1/11	23	6.9	18.4	3.0

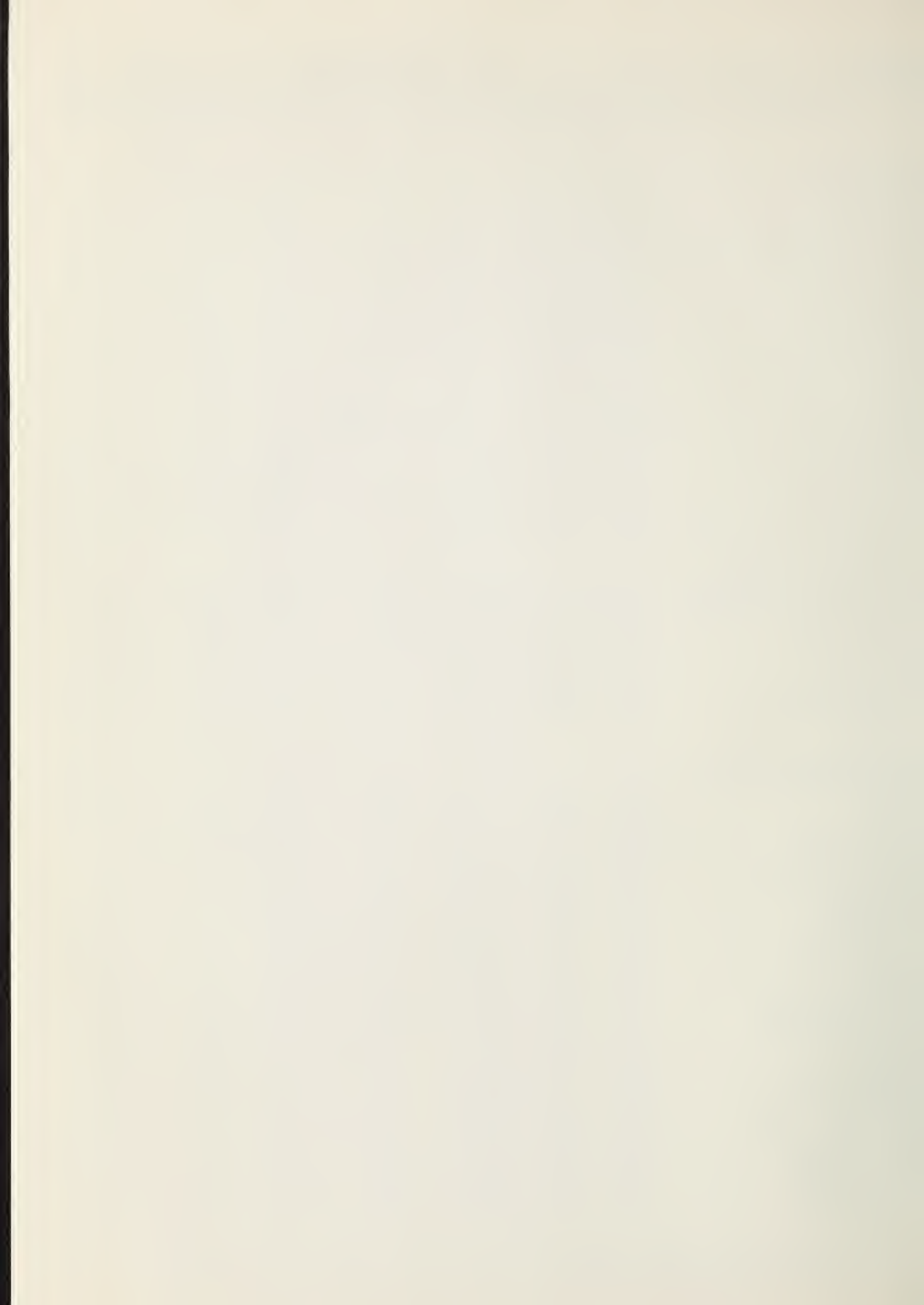
BILL WILLIAMS RIVER

Camp Wood *	12R1	5700	1/14	0	0.0	8.1	0.4
Copper Basin Divide	12R6	6720	1/13	4	1.3	10.1	1.2 **
Iron Springs	12R2	6200	1/13	0	0.0	6.7	0.9
Willow Ranch (discontinued)							

(a) 1953-67, 15 year snow. (*) Adjacent drainage. (**) 1953-67 Adjusted Average. (A) Aerial observation: Water content estimated.

SNOW ABOUT JANUARY 15, 1969

DRAINAGE BASIN and SNOW COURSE			CURRENT INFORMATION			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	NO.	ELEVATION				LAST YEAR	AVERAGE ^a
<u>VERDE RIVER</u>							
Baker Butte	11R6	7300	1/13	14	4.1	15.6	---
Camp Wood	12R1	5700	1/14	0	0.0	8.1	0.4
Chalender	12P1-M	7100	1/15	4	1.1	8.1	1.5
Copper Basin Divide	12R6	6720	1/13	4	1.3	10.1	1.2 **
Fort Valley	11P2	7350	1/14	3	1.5	6.3	0.9
Gaddes Canyon	12R4	7600	1/14	10	2.7	14.1	2.1 **
Happy Jack	11R5	7630	1/14	9	2.9	8.7	1.4
Iron Springs *	12R2	6200	1/13	0	0.0	6.7	0.9
Mingus Mountain	12R3	7100	1/14	0	0.0	8.6	0.6
Mormon Lake *	11R4	7350	1/14	9	3.2	10.4	1.6
Mormon Mountain	11R3-M	7500	1/14	11	3.6	10.7	2.2
Munds Park	11R1-M	6500	DISCONTINUED			7.8	0.9
Newman Park	11P5-M	6750	1/15	8	2.6	8.2	1.2 **
Snow Bowl #1	11P4	10260	1/13	14	3.8	9.9	4.8 **
Snow Bowl #2	11P6	11000	1/13	24	5.7	15.5	---
White Spar	12R5	6000	1/13	0	0.0	8.0	0.9 **
White Horse Lake Jct.	12P2	7150	1/15	3	1.0	9.9	---
<u>LOWER COLORADO RIVER</u>							
Bill Williams Summit	12P4	8950	1/15	23	5.4	11.7	---
Bill " Intermediate	12P5	8550	1/15	20	5.0	12.2	---
Bright Angel	12N1	8400	NO SURVEY			---	---
Chalender *	12P1-M	7100	1/15	4	1.1	8.1	1.5
Fort Valley	11P2	7350	1/14	3	1.5	6.3	0.9
Grand Canyon	11P1	7500	1/15	6	1.8	5.5	2.1 **
Williams Ski Run	12P3	7720	1/15	14	4.0	12.0	---
<u>LITTLE COLORADO RIVER</u>							
Agassiz (A)	11P-10	11200	1/3	32	7.7	---	---
Baldy	9S1	9125	1/14	19	4.8	11.3	4.2
Canyon Creek	10R7-M	7500	1/13	9	2.9	11.8	1.7 **
Canyon Point	10R9	7600	1/13	12	3.7	12.5	---
Cheese Springs	9R7	8600	1/14	19	4.8	---	---
Forest Dale	10R6	6430	1/14	5	1.6	9.3	0.7
Ft. Apache	9R5	9160	1/14	19	5.1	11.6	4.7
Fort Valley	11P2	7350	1/14	3	1.5	6.3	0.9
Happy Jack *	11R5	7630	1/14	9	2.9	8.7	1.4
Heber	10R4	7600	1/13	11	3.3	12.3	1.8
Inner Basin #1	11P9	10100	1/3	23	6.0	15.0	---
Inner Basin #2	11P8	9750	1/3	19	4.9	12.3	---
Inner Basin #3	11P7	10250	1/3	7	1.9	15.9	---
McNary	9R2-M	7200	1/14	11	3.7	10.0	1.3
Mormon Lake	11R4	7350	1/14	9	3.2	10.4	1.6
Mormon Mountain	11R3-M	7500	1/14	11	3.6	10.7	2.2
Nutriosio	9S4	8500	1/14	6	2.8	8.6	1.4
Snow Bowl #1	11P4	10260	1/13	14	3.8	9.9	4.8 **
Snow Bowl #2	11P6	11000	1/13	24	5.7	15.5	---
Wilson Lake *	9R6	9000	1/14	27	7.8	12.2	---



PRECIPITATION AT SELECTED ARIZONA STATIONS 1/

STATION	Precipitation (Inches)			
	<u>December - 1968</u>		<u>Current Water-Year</u>	
	<u>Departure from</u>		<u>Oct. 1968 - Dec. 1968</u>	
	Total	Normal	Total	Departure from Normal
Alpine	2.20	+ 1.03	3.53	- .27
Ash Fork	.35	- .83	1.49	- 1.11
Clifton	1.40	+ .38	2.70	+ .24
Douglas Smelter	.46	- .21	1.72	- .05
Flagstaff WBAS*	2.71	+ 1.06	4.96	+ .79
McNary	4.66	+ 2.29	7.66	+ 2.02
Payson Ranger Station	1.02	- .88	4.92	+ .17
Phoenix WBAS*	.69	- .16	1.95	+ .15
Prescott (City)	1.15	- .62	2.87	- 1.20
Springerville	.23	- .26	.94	- .79
Tucson WBAS*	.32	- .60	2.27	+ .09
Winslow WBAS*	.45	- .07	1.85	+ .31
Yuma WBAS*	.06	- .26	.06	- .76

1/ Data and Analysis furnished by Paul C. Kangieser,
Arizona State Climatologist, U. S. Weather Bureau
ESSA, Tempe

* WBAS = Weather Bureau Airport Station.

THEORY OF THE EARTH AND ITS HISTORY

The theory of the earth and its history is a branch of geology which deals with the origin and development of the earth and its various parts. It is a science which seeks to explain the processes which have shaped the earth and its features, and to determine the sequence of events which have taken place since the earth was first formed.

The theory of the earth and its history is based on the study of the earth's rocks and fossils, and on the principles of geology. It is a science which seeks to explain the processes which have shaped the earth and its features, and to determine the sequence of events which have taken place since the earth was first formed.

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ARIZONA SOIL MOISTURE - ABOUT JANUARY 15, 1969

Drainage Basin and Station	<u>1/</u> Station Number	Elev.	Soil Profile <u>in Inches</u>		Date	Soil Moisture Content in Inches			
			Depth	Cap.		1969	Past Record		Avg.
						1968	1967		
<u>GILA RIVER</u>									
Frisco Divide	8S1-M	8000	48	13.3	1/14	6.6	10.3	7.9	9.7
<u>SALT RIVER</u>									
Black River Divide	9S10-*	9100	48	16.8	1/14	14.4	17.2	14.8	14.6
Canyon Creek	10R7-M	7500	48	18.3	1/13	14.2	14.2	18.7	15.0
Corduroy Creek	10R8-*	6000	36	13.5	1/13	6.0	14.1	7.4	7.9
McNary	9R2-M	7200	48	16.3	1/14	14.0	13.7	15.0	14.8
<u>VERDE RIVER</u>									
Mormon Mountain	11R3-M	7500	48	16.1	1/15	13.4	13.6	17.6	15.0
Newman Park	11P5-M	6750	48	17.7	1/15	12.6	14.5	18.1	14.6

1/ * - Soil Moisture Station Only
M - Snow Course and Soil Moisture Station

SNOW COURSE

Baker Butte
Baldy
Bear Wallow
Beaver Head
Bill Williams Intermediate
Bill Williams Summit
Bright Angel
Camp Wood
Canyon Creek
Canyon Point
Chalender
Cheese Springs
Copper Basin Divide
Coronado Trail
Crazy Horse
Emory Pass
Forest Dale
Ft. Apache
Fort Valley
Frisco Divide
Gaddes Canyon
Grand Canyon
Hannagan Meadows
Happy Jack
Hawley Lake
Heber
High Peak
Hummingbird
Ice King
Inner Basin #1,#2,#3
Iron Springs
Maverick Fork
McKnight Cabin
McNary
Milk Ranch
Mingus Mountain
Mogollon
Mormon Lake
Mormon Mountain
Mt. Ord
Munds Park
Newman Park
Nutrioso
Redstone Trail
Rose Canyon
Silver Creek Divide
Smith Cienega
Snow Bowl #1
Snow Bowl #2
State Line
White Horse Lake Junction
White Spar
Whitewater
Williams Ski Run
Wilson Lake
Workman Creek

SNOW SURVEYOR

SCS
SCS - Bill Cole
Forest Service - Douglas Smith
N. A. Josh
Forest Service - Robert Wagenfehr
Forest Service - Robert Wagenfehr
National Park Service - Charles Sigler, Dist. Rgr.
Forest Service - Walter G. Richardson
SCS
SCS
Forest Service - M. E. Richards
SCS - Bill Cole
SCS - Bill Gray
Forest Service - John W. Holt
Forest Service - Lloyd Barnett
SCS - Bob Abercrombie
Bureau of Indian Affairs - Raymond Endfield
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station
Forest Service - D. B. Jensen
Paul G. Lidbeck
National Park Service - Robert E. Scott, Dist.Rgr.
N. A. Josh
Forest Service - Don W. Witt
Bureau of Indian Affairs - Raymond Endfield
SCS
Forest Service - Lloyd Barnett
Ray Freeman
James R. Wray
SCS and USBR - Jack Jorgensen and Sid Saunders
SCS - Bill Gray
SCS - Bill Cole
Ray Freeman
Bureau of Indian Affairs - Raymond Endfield
Bureau of Indian Affairs - Raymond Endfield
Paul G. Lidbeck
James R. Wray
SCS - Jack Jorgensen
SCS - Jack Jorgensen
Salt River Project
SCS - Jack Jorgensen
SCS - Jack Jorgensen
Forest Service - John W. Holt
James R. Wray
Forest Service - Douglas Smith
James R. Wray
Salt River Project
Forest Service - Angus Porter
Forest Service - Angus Porter
Forest Service - D. B. Jensen
Forest Service - Robert Wagenfehr
SCS - Bill Gray
Ray Freeman
Forest Service - Robert Wagenfehr
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station



The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service

Apache Forest

Coconino Forest

Coronado Forest

Gila Forest

Kaibab Forest

Prescott Forest

Rocky Mountain Forest and Range Experiment Station

Tonto Forest

Department of Commerce

Weather Bureau

Arizona Section

Department of Interior

Bureau of Reclamation

Region III

Geological Survey

Arizona District

Bureau of Indian Affairs

Fort Apache Reservation

San Carlos Irrigation Project

National Park Service

Grand Canyon National Park

Gila Water Commissioner

Safford, Arizona

STATE

University of Arizona

Arizona Agricultural Experiment Station

Water Resource Research Center

IRRIGATION PROJECTS

Salt River Valley Water Users' Association

Phoenix, Arizona

San Carlos Irrigation and Drainage District

Coolidge, Arizona

PRIVATE

Southwest Forest Industries, Inc.

McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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SOIL CONSERVATION SERVICE
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*"The Conservation of Water begins
with the Snow Survey"*